

**CLMPTO**

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- 39. An assay method comprising:

a) providing a sensor array comprising:

i) a first subpopulation comprising first sensor elements; and

ii) a second subpopulation comprising second sensor elements;

b) adding a sample comprising a first target analyte that binds to said first sensor elements;

c) measuring

i) a first fluorescent signal of a first of said first sensor elements; and

ii) a second fluorescent signal of a second of said first sensor elements; and

d) summing said first and second fluorescent signals.

40. A method according to claim 39 further comprising:

b) adding a sample comprising a second target analyte that binds to said second sensor elements;

c) measuring

i) a third fluorescent signal of a first of said second sensor elements; and

ii) a fourth fluorescent signal of a second of said second sensor elements; and

d) summing said third and fourth fluorescent signals.

41. A method according to claim 39 wherein said first and second sensor elements comprise beads.

42. A method according to claim 39 wherein said sensor array comprises beads distributed in wells.

43. A method according to claim 39 wherein said first and second sensor elements comprise chemical functional groups.
44. A method according to claim 39 wherein said first and second sensor elements comprise oligonucleotides.
45. A method according to claim 39 wherein said first target analyte is an oligonucleotide.
46. A method according to claim 39 wherein prior to said summing, the baseline of said first and second fluorescent signals are adjusted.- -.
47. A method according to claim 39 wherein the signal-to-noise ratio is increased as a result of said summing.
48. A method according to claim 39 wherein said sensor array comprises a fiber optic bundle.- -.